

What Is Claimed Is:

1. A block heater, comprising:

    a sheathed heater having a heating element embedded in heat-resistant insulation powder inside a heat-resistant metal sheath;

    a cylindrical body for retaining the back-end portion of said sheathed heater and mounted onto a heater mounting portion at an area in contact with cooling water inside an automotive engine water jacket; and

    a cap attached to the opposite end of said sheathed heater of said cylindrical body, and structured so as to retain an end of a cable connected to the sheathed heater, the cable having a power supply outlet at the other end thereof, and said connection end being constructed connectably to said sheathed heater;

    wherein a gap is defined between the end on the cap side of said cylindrical body and the end on the body side of said cap.

2. A block heater according to claim 1, wherein said gap is formed between the end portions of said cylindrical body and cap so as to define clearance of a prescribed measurement in the axial direction.

3. A block heater, comprising:

a sheathed heater having a heating element embedded in heat-resistant insulation powder inside a heat-resistant metal sheath;

a cylindrical body for retaining the back-end portion of said sheathed heater and mounted onto a heater mounting portion at an area in contact with cooling water inside an automotive engine water jacket; and

a cap attached to the opposite end of said sheathed heater of said cylindrical body, and structured so as to retain an end of a cable connected with a sheathed heater, the cable having a power supply outlet at the other end thereof, and said connection end being constructed connectably to said sheathed heater;

wherein a gap is defined in the sheathed heater retaining portion where the sheathed heater is retained by said cylindrical body between the end on said sheathed heater side and the heating element constituted by heating wire inside said sheathed heater.

4. A block heater according to claim 3, wherein the end on said sheathed heater side in the sheathed heater retaining portion where the sheathed heater is retained by said cylindrical body is structured with the bottom of a concave portion provided to said cylindrical body.

5. A block heater, comprising:

a sheathed heater having a heating element embedded in heat-resistant insulation powder inside a heat-resistant metal sheath;

a cylindrical body for retaining the back-end portion of said sheathed heater and mounted onto a heater mounting portion at an area in contact with cooling water inside an automotive engine water jacket; and

a cap attached to the opposite end of said sheathed heater of said cylindrical body, and structured so as to retain an end of a cable connected with a sheathed heater, the cable having a power supply outlet at the other end thereof, and said connection end being constructed connectably to said sheathed heater;

wherein a part on one end side in the axial direction of the sheathed heater retaining portion where the sheathed heater is retained by said cylindrical body is caulked in the entire circumference thereof so as to fix the part, and a part on the other end side in the axial direction of said retaining portion is soldered in the entire circumference thereof so as to fix the part.

6. A block heater, comprising:

a sheathed heater having a heating element embedded in heat-resistant insulation powder inside a heat-resistant metal sheath;

a cylindrical body for retaining the back-end portion of said sheathed heater and mounted onto a heater mounting portion of an automotive engine block; and

a cap attached to the opposite end of said sheathed heater of said cylindrical body, and structured so as to retain an end of a cable to be connected with a sheathed heater, the cable having a power supply outlet at the other end thereof, and said connection end being constructed connectably to said sheathed heater;

wherein, when the cooling water inside the engine water jacket runs out or when the amount of cooling water falls below a prescribed amount, nichrome wire inside the sheathed heater is disconnected so as to prevent the sheathed heater from generating heat.